

## CLAIMS

1. A high-speed transmission connector for electrically connecting, through high-speed transmission paths, a plurality of first external connecting terminals disposed on one end and a plurality of second external connecting terminals disposed on another end, said connector comprising:

a high-speed transmission connecting sheet wherein a top sheet on which first elastomer connectors are formed on one end, a bottom sheet on which second elastomer connectors are formed on the other end, and a high-speed transmission path board for three-dimensionally connecting said first elastomer connectors and said second elastomer connects through a plurality of high-speed transmission paths having a stripline structure, are layered; and

an insulating plug housing in which said high-speed transmission connecting sheet is installed, with said first elastomer connectors being disposed on one inner wall of opposing inner walls and said second elastomer connectors being disposed on the other inner wall of said opposing inner walls;

wherein said plurality of first external connecting terminals disposed on said one end are disposed on said first elastomer connectors, said plurality of second external connecting terminals disposed on said other end are disposed under said second elastomer connectors, and both ends of said

top sheet of said high-speed transmission connecting sheet are pressed into contact such that said first external connecting terminals and said second external connecting terminals are connected through said plurality of high-speed transmission paths.

2. A high-speed transmission connector according to Claim 1, with the high-speed transmission connecting sheet installed within, the high-speed transmission connecting sheet comprising:

a top sheet wherein a plurality of first elastomer strips having electroconductivity between the front and rear sides are disposed on one end of a first elastomer sheet which is non-electroconductive, so as to form first elastomer connectors at said one end;

a bottom sheet wherein a plurality of second elastomer strips having electroconductivity between the front and rear sides are disposed on the other end of a second elastomer sheet which is non-electroconductive, so as to form second elastomer connectors at said other end;

a plurality of high-speed transmission path boards in which a plurality of third elastomer strips which are electroconductive between the front and rear sides are disposed on both ends of a third elastomer sheet having a certain dielectric constant, so as to form third elastomer connectors at the both ends, and which has a stripline structure in which a plurality of high-speed transmission

paths are formed as patterns on said third elastomer sheet for connecting said plurality of third elastomer strips formed on both ends of said third elastomer sheet; and one or more intermediate layer boards wherein a plurality of fourth elastomer strips which are electroconductive between the front and rear sides are disposed on both ends of a fourth elastomer sheet which is non-electroconductive, so as to form fourth elastomer connectors at said both ends;

wherein said intermediate layer boards are interposed between said high-speed transmission path boards, said plurality of high-speed transmission path boards and said one or more intermediate layer boards are layered such that the plurality of high-speed transmission paths are three-dimensionally connected, and furthermore, said top sheet and said bottom sheet are layered on the front and the back thereof.

3. A high-speed transmission connector according to Claim 2, with the high-speed transmission connecting sheet installed therewithin, wherein the plurality of parallel high-speed transmission paths formed on one of said high-speed transmission path boards disposed upper side and the plurality of parallel high-speed transmission paths formed on another of said high-speed transmission path boards disposed lower side are arrayed alternately.

4. A high-speed transmission connector according to any one of

the Claims 1 through 3, wherein said high-speed transmission paths include differential signal paths forming pairs.

5. A high-speed transmission connector according to Claim 1, further comprising:

an insulating receptacle header which has a horizontal piece inserted from one end side of said plug housing, and which is disposed such that said plurality of first external connecting terminals come into contact with the lower wall of said horizontal piece; and

a paddle which is rotatably disposed at the top of one end of said plug housing and of which around the center of rotation is formed as a plate cam;

wherein, in a state of said horizontal piece of said receptacle header being inserted into said plug housing, upon turning said paddle, said plate cam presses down said horizontal piece so that said plurality of first external connecting terminals are pressed into contact with said first elastomer connectors.

6. A high-speed transmission connector according to Claim 1, further comprising an insulating pressure-contact block assembled to the other end of said plug housing, wherein said pressure-contact block presses said top sheet so as to press said second elastomer connectors into contact with said plurality of second external connecting terminals.

7. A high-speed transmission connector according to Claim 5, wherein a groove is formed on the upper face of said horizontal piece, and an L-shaped claw is formed on the edge portion of said paddle, thereby configuring a locking mechanism for retaining said claw at said groove in said horizontal piece upon turning said paddle to a laid down state.